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ABSTRACT

Described is a device for use by teachers who are deaf, to assist them with the improvement of their instruction through the Flanders Interaction Analysis method of assessing teachers' classroom performance. Explained, and illustrated with photographs, is an electrical device which, when attached to a videotape recording camera, displays a 3-second visual signal on playback of a videotape--the signal corresponding to the audible "beep" ordinarily used with training materials for the Flanders system. (IM)

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The Deaf Teacher and Flanders Interaction Analysis

ABSTRACT

This article provides a description of an easily constructed electrical device which when attached to a videotape recording camera displays a three-second visual signal on playback of a videotape. This signal corresponds to the audible "beep" ordinarily used with training materials for Flanders Interaction Analysis.

Because deaf teachers can't utilize the audible signal they may, instead, use this device for assisting them with the improvement of their instruction through Flanders Interation Analysis.

The Author

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The Deaf Teacher
and Flanders Interaction Analysis

During the late 1950's and early 1960's, Ned Flanders developed what eventually became known as Flanders Interaction Analysis Category system (FIAC). Fundamentally, the FIAC is an attempt to systematically describe selected teaching behavior. To accomplish this, Flanders developed ten descriptive categories of teaching behavior. These are:

1. Teacher accepts feelings of students;
2. Teacher accepts or uses the ideas of students;
3. Teacher praises or encourages students;
4. Teacher asks questions;
5. Teacher lectures;
6. Teacher gives directions;
7. Teacher criticizes or justifies authority;
8. Student talk response;
9. Student talk initiation;
10. Silence.

Flanders' system has been demonstrated repeatedly through various articles as being an effective method for assisting hearing teachers -- especially at the secondary level -- by providing feedback concerning their performance in the classroom. (See Amidon and Hough, 1967 and Flanders, 1970)

Flanders writes that "the major feature of this category system lies in the analysis of initiative and response which is a characteristic of interaction between two or more individuals. With this ten-category system, an estimate of the balance between initiative and response can be inferred..." (Flanders, 1970, p. 35)

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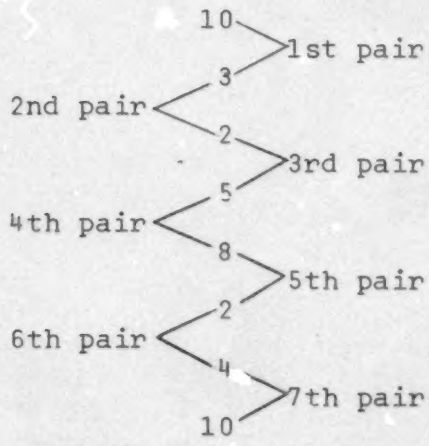
In order to utilize this system of observation, the observer records the verbal behavior of classroom interaction by writing, sequentially, the number of the category corresponding to the category of verbal behavior. The essential element in using the Flanders sytem is to keep "the tempo as steady as possible" (Flanders, 1970, p. 37). The rate of observation should be approximately 20 to 25 tallies per minute which is about one tally every three seconds.

At the conclusion of the teaching episode, the observer may enter the data into a matrix such as in Figure 1. To accomplish this, the first pair (10-3) is entered into the matrix by locating the tenth row and third column and inserting a single tally mark. The second pair (3-2) entry is located by the third row and the second column. This same pattern is always followed, that is, the first member of the pair is located by the row and the second member of the pair is located by the column until all entries have been made.

There are several analyses available from the matrix data at the conclusion of the tallying procedure. Each of the analyses will result in a ratio. Specifically, the teacher can sum all of the tally marks for each row. Then, compute the sum of the row sums which produces the "grand total."

For the initial analysis, one question might be asked: "What was the total amount of time the teacher spent lecturing?" To answer this, it is only necessary to divide the sum for row five (category 5: Teacher lectures) by the grand total. This will derive a value corresponding to the percent of time the teacher lectured during the period being observation.

Another question may be in reference to the total percent of time



	1	2	3	4	5	6	7	8	9	10	Total
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
Total											Grand Total

Figure 1: FIAC System Matrix

spent by students talking -- either in response to a specific question asked by the teacher or a response initiated by a student. These two kinds of student talk are represented in the FIAC system as category eight and nine, respectively. The procedure used to compute this is simple. Add the sums for row eight and row nine and divide the new sum by the "grand total."

It is possible, through these types of questions and resulting computations, to extract large amounts of information relative to the observed teaching session. Flanders (1970) has identified a series of important ratios with each reflecting important relationships between the teacher and students. Some of these are: Teacher Response Ratio (TRR), Teacher Question Ratio (TQR), Content Emphasis (CCR), etc.

In applying the FIAC system, the typical arrangement has been for a hearing teacher to participate in a short training session in the use of Flanders Interaction Analysis Category system and subsequently exhibit teaching behavior for analysis. The teaching session during training is usually videotaped to permit the teacher to view his own performance. In a subsequent private viewing of the videotape, the teacher scores his performance and analyzes the data, gathering information for the improvement of his instructional methods. In some schools, colleagues may assist by operating the video camera and/or scoring the teaching performance.

Inherent difficulties inhibit the use of Flanders' system by a teacher who is deaf. There are no FIAC training materials incorporating sign language and, in addition, the training materials available for the hearing teacher frequently use an *audible* "beep" as a three-second signal for scoring. It is particularly critical that the scorer of

teaching behavior learns to develop through experience and practice this three-second rhythm. It is essential in insuring consistent scoring which will result in eventual reliability of procedure.

The primary purpose of this article is to provide a technique which can be used to help train the deaf teacher in Flanders Interaction Analysis Category system.

The first difficulty when using FIAC with deaf teachers is the procedure of video taping. This difficult arises because of the necessity of viewing both the teacher and his students in order to "read" the conversation. Today there are many schools which have equipment commonly labeled as special effects generators. It would be particularly helpful if your program owns or has access to a special effects generator. This piece of equipment has the capability of the "horizontal split," i.e., to split the screen horizontally permitting one camera (one-half of the screen) to focus on the teacher while a second camera focuses on the class.

If your program does not have the special effects generator, the video taping procedure becomes more difficult. As an alternative, it is possible to use the single camera placed to the side of the classroom. However, it will require the assistance of an individual to operate the camera by swinging it back and forth between teacher and student behavior. In some cases the interaction may be so fast that swinging the camera back and forth may become distracting, during both filming and viewing. With or without the special effects generator, it probably would be best to use a close-up shot of both the teacher and the students when they are signing to facilitate the reading of the signs on playback. Practice with the camera lens placed at various settings will yield comfortable viewing.

To circumvent the audible "beep" used by a hearing person when being trained with FIAC, it is possible (for approximately fifteen dollars) to construct a simple device using a light emitting diode to generate a visual signal. This light flashes on the TV screen during playback of the video taped teaching session to indicate scoring intervals. Diagram A provides a schematic drawing of the circuits necessary for the construction of the visual "beep." Also, the "bill of good" has been included for the construction of this simple device. The visual "beep" appears on the screen during playback as a small bright spot which is not in focus. This is because the lens of the camera has been adjusted to focus on the teacher during the filming. This visual signal is sufficient to be noticeable yet not distracting.

Once the visual signal device is constructed, making certain that there is enough wire to permit the light-emitting diode to reach in front of the lens, mount the unit on the TV camera with black electrical tape. Illustration A shows the constructed unit and Illustration B depicts the unit mounted on the camera. Again, use black electrical tape to secure the light-emitting diode to the lens of the camera which is used for video taping the teacher. By adjusting the rheostat, the user may vary the frequency of "beeping" from about a two- through a thirty-second interval.

After the unit has been constructed and mounted on the appropriate camera, and your video taping procedures resolved, the next step is to develop suitable training materials for instruction of the deaf participant.

Since it is not the intent of this article to explain Flanders Interaction Analysis Category system in depth or to describe training

procedures, the author recommends that the reader secure a copy of the following publications:

Amidon, Edmund and John Hough. Interaction Analysis: Theory, Research, and Application. Reading, Mass.: Addison-Wesley, 1967.

Flanders, Ned A. Analyzing Teaching Behavior. Reading, Mass.: Addison-Wesley Publishing Company, 1970.

Flanders, Ned A. "The Changing Base of Performance-Based Teaching." Phi Delta Kappan, LV:5 (January 1974), 312-315.

Acknowledgement is given to Mr. James Knowlton for the design of the circuit described in this article.

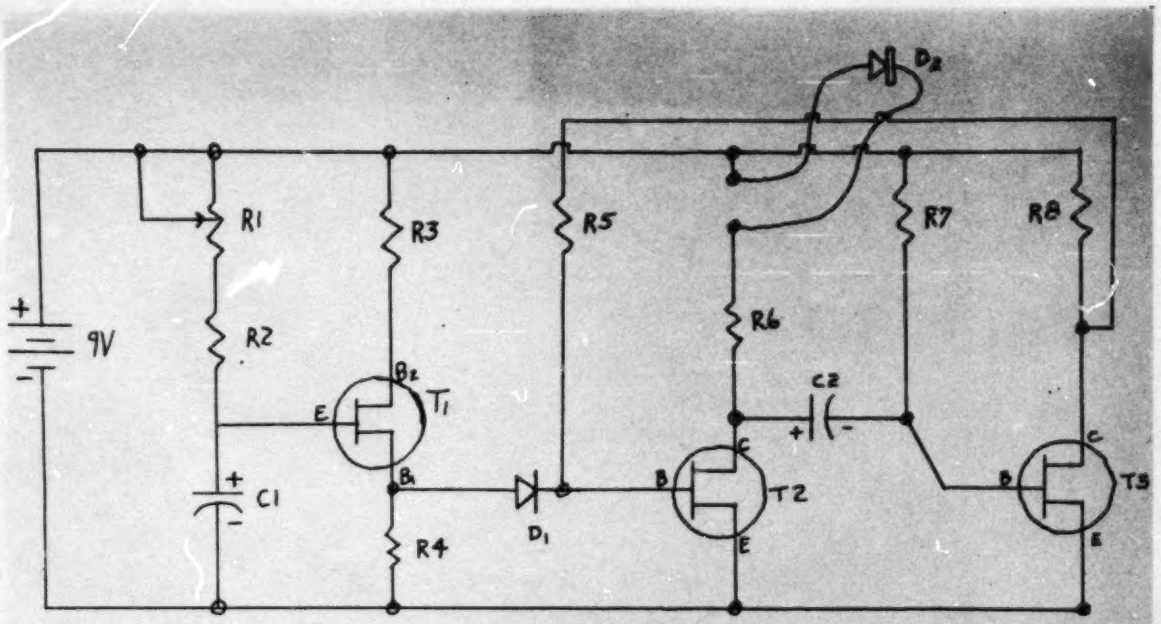


Diagram A

Diagram A - Circuit Schematic

Hoover----"The Deaf Teacher
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Bill of Goods

9V	This is a 9 volt battery which is found in transistorized radios
R1	80K to 100K ohm variable resistor--try to use the lower value
R2	10K ohm resistor--¼ watt
R3	1K ohm resistor--¼ watt
R4	22K ohm resistor--¼ watt
R5	33K ohm resistor--¼ watt
R6	135K to 150K ohm resistor--try to use the lower value--¼ watt
R7	100K ohm resistor--¼ watt
R8	10K ohm resistor--¼ watt
C1	250 micro farad/10 volt capacitor
C2	10 micro farad/10 volt capacitor
T1	Transistor 2N494
T2	Transistor MPS5172
T3	Transistor MPS5172
D1	Diode IN916
D2	Light emitting diode (LED)--any LED will work

Use two wafer boards to mount the electrics such as Keepline 2055PK.

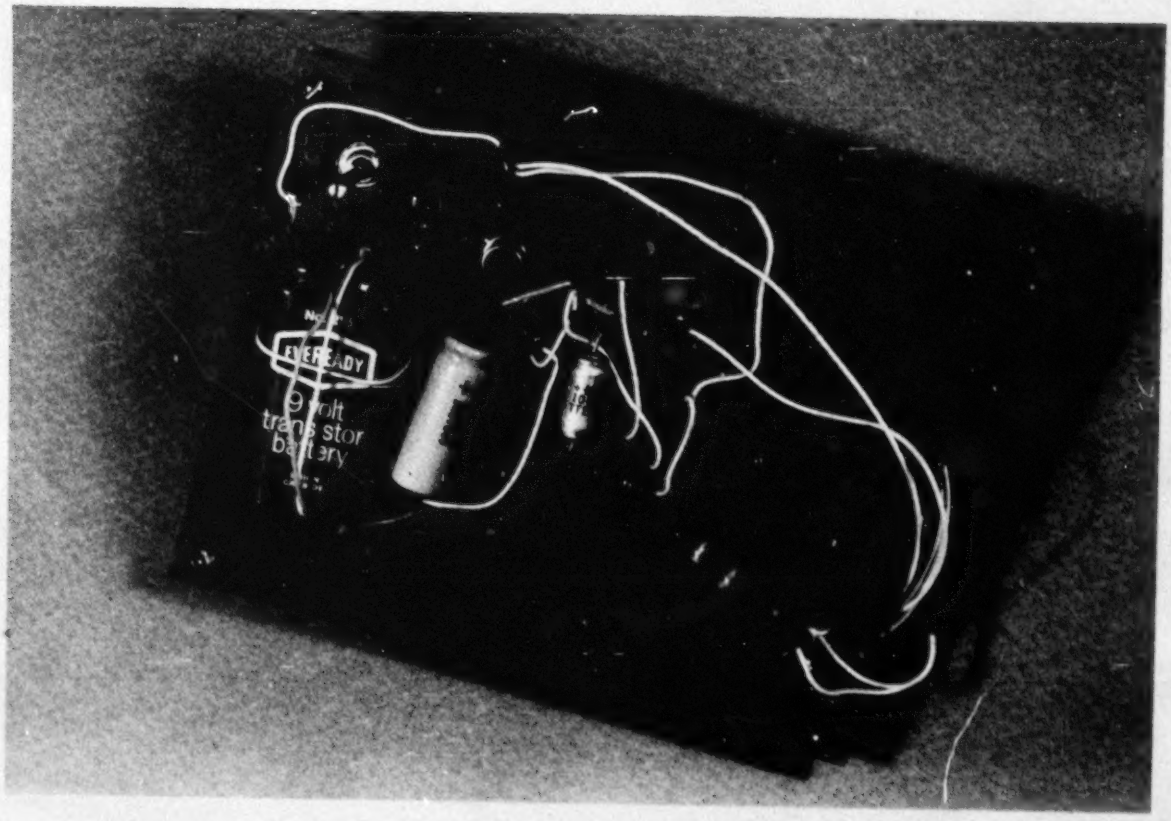

Illustration A - Constructed Unit

Hoover----"The Deaf Teacher
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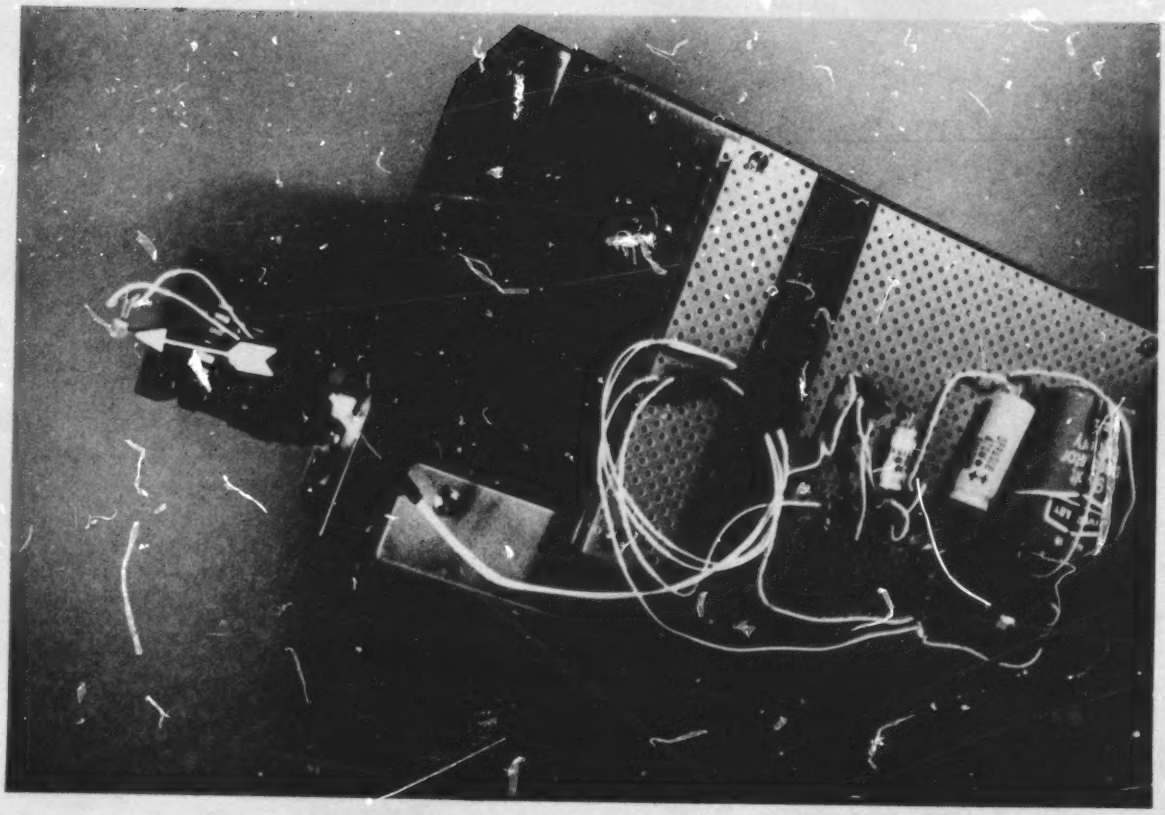

Illustration B - Mounted Unit

Hoover----"The Deaf Teacher
and Flanders Interaction Analysis"